

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An ink jet printhead comprising:
 - a plurality of nozzles; and,
 - at least one heater element corresponding to each of the nozzles respectively, the heater element configured for thermal contact with a bubble forming liquid; such that,
 - heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a drop of an ejectable liquid through the nozzle corresponding to that heater element; wherein,
 - the gas bubble displaces less than 4 nanograms of the ejectable liquid to cause the ejection of the drop.
2. (Original) The printhead of claim 1 wherein the gas bubble displaces less than 3 nanograms of the ejectable liquid to cause the ejection of the drop.
3. (Original) The printhead of claim 1 wherein the gas bubble displaces less than 2 nanograms of the ejectable liquid to cause the ejection of the drop.
4. (Original) The printhead of claim 1 wherein the gas bubble displaces less than 1.5 nanograms of the ejectable liquid to cause the ejection of the drop.
5. (Original) The printhead of claim 1 wherein the bubble forming liquid and the ejectable liquid are of a common body of liquid.
6. (Original) The printhead of claim 1 being configured to print on a page and to be a page-width printhead.
7. (Original) The printhead of claim 1 wherein each heater element is in the form of a cantilever beam.
8. (Previously Presented) The printhead of claim 1 wherein each of the nozzles defines an ejection aperture positioned less than 50 microns from the heater element.

9. (Previously Presented) The printhead of claim 1 configured to receive a supply of the ejectable liquid at an ambient temperature, wherein each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of a said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of said drop, from a temperature equal to said ambient temperature to said boiling point.
10. (Original) The printhead of claim 1 comprising a substrate having a substrate surface, wherein the areal density of the nozzles relative to the substrate surface exceeds 10,000 nozzles per square cm of substrate surface.
11. (Previously Presented) The printhead of claim 1 wherein each heater element has two opposite sides and is configured such that said gas bubble formed by that heater element is formed at both of said sides of that heater element.
12. (Original) The printhead of claim 1 wherein the bubble which each element is configured to form is collapsible and has a point of collapse, and wherein each heater element is configured such that the point of collapse of a bubble formed thereby is spaced from that heater element.
13. (Original) The printhead of claim 1 comprising a structure that is formed by chemical vapor deposition (CVD), the nozzles being incorporated on the structure.
14. (Original) The printhead of claim 1 comprising a structure which is less than 10 microns thick, the nozzles being incorporated on the structure.
15. (Original) The printhead of claim 1 comprising a plurality of nozzle chambers each corresponding to a respective nozzle, and a plurality of said heater elements being disposed within each chamber, the heater elements within each chamber being formed on different respective layers to one another.

16. (Original) The printhead of claim 1 wherein each heater element is formed of solid material more than 90% of which, by atomic proportion, is constituted by at least one periodic element having an atomic number below 50.
17. (Previously Presented) The printhead of claim 1 wherein each heater element includes solid material and is configured for a mass of less than 10 nanograms of the solid material of that heater element to be heated to a temperature above said boiling point thereby to heat said part of the bubble forming liquid to a temperature above said boiling point to cause the ejection of said drop.
18. (Original) The printhead of claim 1 wherein each heater element is substantially covered by a conformal protective coating, the coating of each heater element having been applied substantially to all sides of the heater element simultaneously such that the coating is seamless.
19. (Original) A printer system which incorporates a printhead, the printhead comprising:
 - a plurality of nozzles; and,
 - at least one heater element corresponding to each of the nozzles respectively, the heater element configured for thermal contact with a bubble forming liquid; such that,
 - heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a drop of an ejectable liquid through the nozzle corresponding to that heater element; wherein,
 - the gas bubble displaces less than 4 nanograms of the ejectable liquid to cause the ejection of the drop.
20. (Original) The system of claim 19 wherein the gas bubble displaces less than 3 nanograms of the ejectable liquid to cause the ejection of the drop.
21. (Original) The system of claim 19 wherein the gas bubble displaces less than 2 nanograms of the ejectable liquid to cause the ejection of the drop.
22. (Original) The system of claim 19 wherein the gas bubble displaces less than 1.5 nanograms of the ejectable liquid to cause the ejection of the drop.

23. (Original) The system of claim 19 being configured to support the bubble forming liquid in thermal contact with each said heater element, and to support the ejectable liquid adjacent each nozzle.
24. (Original) The system of claim 19 wherein the bubble forming liquid and the ejectable liquid are of a common body of liquid.
25. (Original) The system of claim 19 being configured to print on a page and to be a page-width printhead.
26. (Original) The system of claim 19 wherein each heater element is in the form of a cantilever beam.
27. (Previously Presented) The system of claim 19 wherein each of the nozzles defines an ejection aperture positioned less than 50 microns from the heater element.
28. (Previously Presented) The system of claim 19, wherein the printhead is configured to receive a supply of the ejectable liquid at an ambient temperature, and wherein each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of said drop, from a temperature equal to said ambient temperature to said boiling point.
29. (Original) The system of claim 19 comprising a substrate having a substrate surface, wherein the areal density of the nozzles relative to the substrate surface exceeds 10,000 nozzles per square cm of substrate surface.
30. (Previously Presented) The system of claim 19 wherein each heater element has two opposite sides and is configured such that said gas bubble formed by that heater element is formed at both of said sides of that heater element.
31. (Original) The system of claim 19 wherein the bubble which each element is configured to form is collapsible and has a point of collapse, and wherein each heater

element is configured such that the point of collapse of a bubble formed thereby is spaced from that heater element.

32. (Original) The system of claim 19 comprising a structure that is formed by chemical vapor deposition (CVD), the nozzles being incorporated on the structure.

33. (Original) The system of claim 19 comprising a structure which is less than 10 microns thick, the nozzles being incorporated on the structure.

34. (Original) The system of claim 19 comprising a plurality of nozzle chambers each corresponding to a respective nozzle, and a plurality of said heater elements being disposed within each chamber, the heater elements within each chamber being formed on different respective layers to one another.

35. (Original) The system of claim 19 wherein each heater element is formed of solid material more than 90% of which, by atomic proportion, is constituted by at least one periodic element having an atomic number below 50.

36. (Previously Presented) The system of claim 19 wherein each heater element includes solid material and is configured for a mass of less than 10 nanograms of the solid material of that heater element to be heated to a temperature above said boiling point thereby to heat said part of the bubble forming liquid to a temperature above said boiling point to cause the ejection of said drop.

37. (Original) The system of claim 19 wherein each heater element is substantially covered by a conformal protective coating, the coating of each heater element having been applied substantially to all sides of the heater element simultaneously such that the coating is seamless.

38. – 54. (Cancelled).

55. (New) An ink jet printhead comprising:

- a plurality of nozzle structures, each nozzle structure comprising :
 - an ink chamber;
 - a nozzle opening;
 - at least one heater element suspended in said ink chamber in thermal contact with an ink within said ink chamber; such that,
 - heating the heater element to a temperature above the boiling point of the ink forms a gas bubble that causes the ejection of a drop the ink through the nozzle opening; wherein,
 - the gas bubble displaces less than 4 nanograms of the ejectable liquid to cause the ejection of the drop;
 - wherein the nozzle opening is disposed directly above the at least one heater element.